1. (Amended) A chemical sensor for detecting a quantity of a chemical, the chemical sensor comprising:

a sensor element producing a measurable signal when activated; and

a polymeric film disposed on the sensor element, the polymeric film comprising at least one hardblock component and at least one softblock component, the polymeric film being capable of capturing a portion of the quantity of the chemical and inducing a measurable change in the signal, the change in the signal being relatable to the quantity of the chemical adjacent to the sensor element.

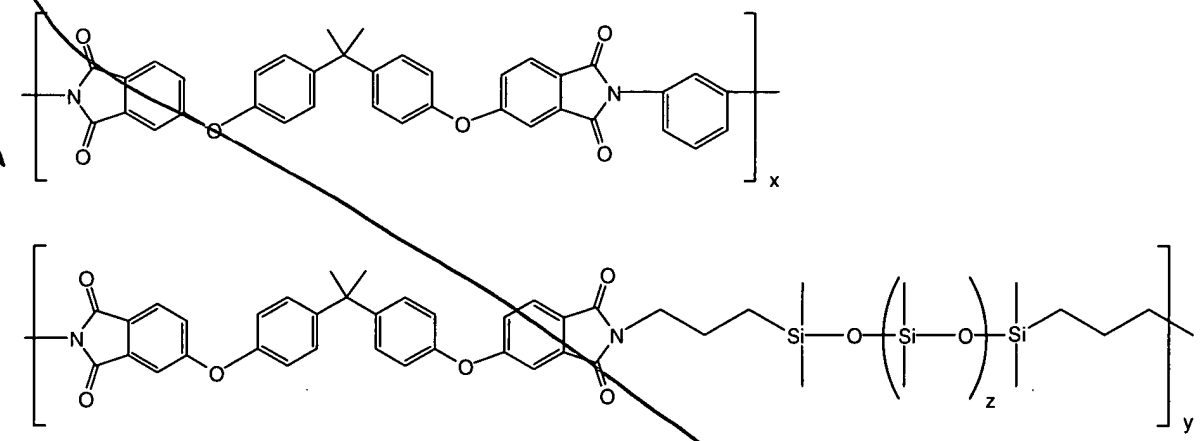
5. (Amended) A sensor according to claim 1, wherein the polymeric film comprises a component that absorbs hydrocarbon vapor to a degree defined by a partition coefficient of the polymeric component with respect to the hydrocarbon vapor.

12. (Amended) A chemical sensor for detecting a quantity of a chemical, the chemical sensor comprising:

a sensor element producing a measurable signal when activated; and

a polymeric film disposed on the sensor element, the polymeric film comprising at least one hardblock component and at least one softblock component, the polymeric film being capable of capturing a portion of the quantity of the chemical and inducing a measurable change in the signal, the change in the signal being relatable to the quantity of the chemical adjacent to the sensor element; wherein the sensor element comprises a quartz crystal microbalance (QCM) sensor that [is provided with] comprises an AT-cut quartz crystal substrate with gold (Au) electrodes.

14. (Amended) A sensor according to claim 1, wherein the polymeric film comprises:



wherein x is in a range from about 1 to about 60, y is in a range from about 40 to 65, and z is in a range from about 3 to about 20.

33. (Amended) A method for enhancing detection of a target compound by a sensor, the method comprising:

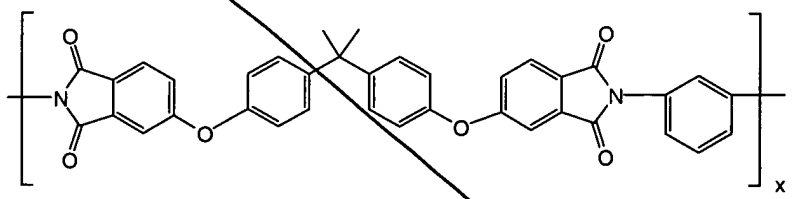
providing a sensor having a sensor element that produces a characteristic response when activated;

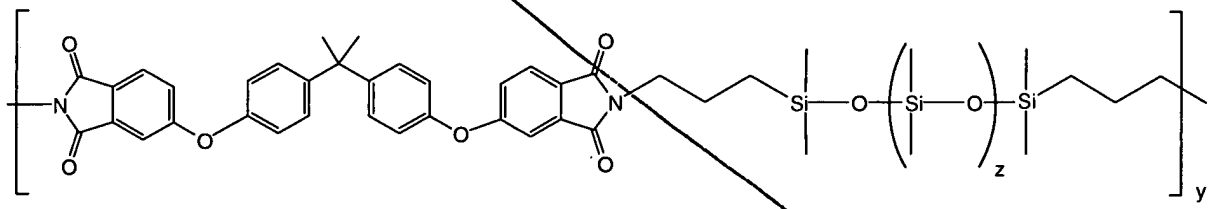
disposing a polymeric film on a surface of the sensor element, the polymeric film being able to capture a quantity of the target compound and producing a change in the characteristic response of the sensor element as a result of the capture of the target compound, wherein the polymeric film comprises at least one hardblock component and at least one softblock component; and

relating the change in the characteristic response of the sensor element to a quantity of the target compound adjacent to the sensor element.

37. (Amended) A method according to claim 33, wherein the polymeric film comprises a component that absorbs hydrocarbon vapor to a degree defined by a partition coefficient of the polymeric component with respect to the hydrocarbon vapor.

49. (Amended) A method according to claim 33, wherein the polymeric film comprises:





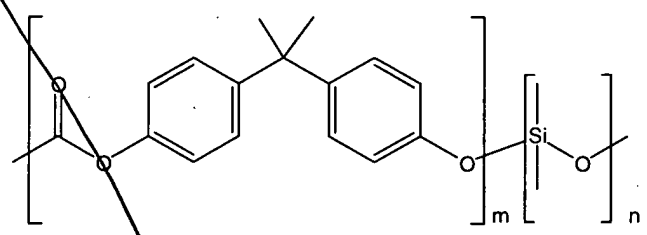
wherein x is in a range from about 1 to about 60, y is in a range from about 40 to 65, and z is in a range from about 3 to about 20.

Please add the following new claims 50-52:

50. (New) The chemical sensor according to claim 1, wherein the sensor element comprises a piezoelectric substrate.

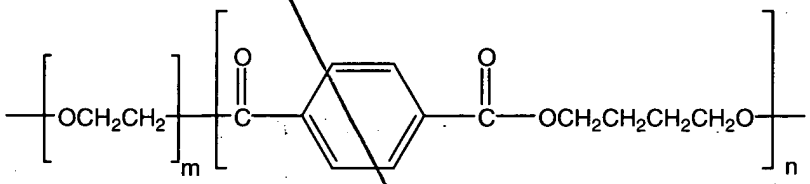
51. (New) The chemical sensor according to claim 1, wherein the signal is an oscillation frequency.

52. (New) The method according to claim 33, wherein the sensor element is a piezoelectric element and the operational characteristic is an oscillation frequency of the piezoelectric element.



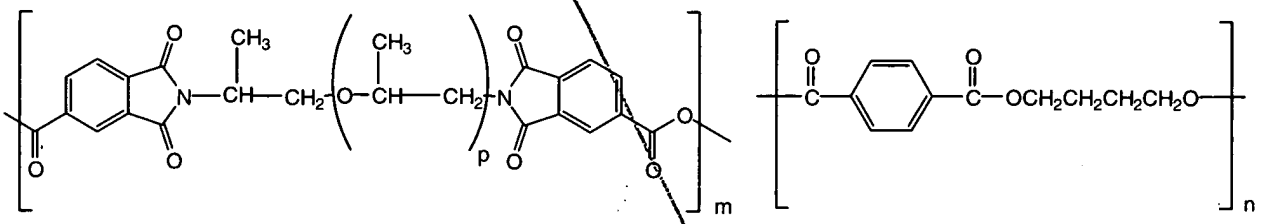
wherein m is in arrange from about 1 to about 4 and n is from about 3 to about 20.

15. (Amended) A sensor according to claim 1, wherein the polymeric film comprises:



wherein m is in a range from about 10 to about 300 and n is in a range from about 5 to about 300.

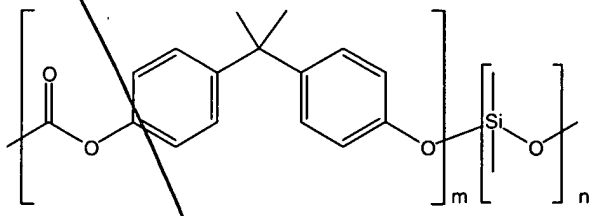
16. (Amended) A sensor according to claim 1, wherein the polymeric film comprises:



wherein m is in a range from about 1 to about 60, p is in a range from about 10 to 200, and n is in a range from about 5 to about 300.

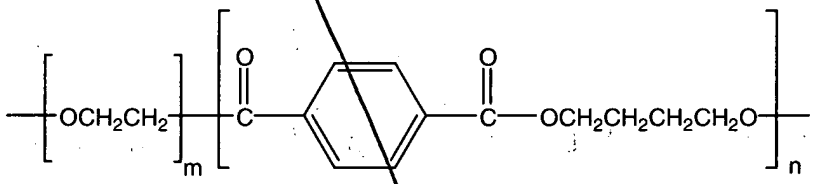
17. (Amended) A sensor according to claim 1, wherein the polymeric film comprises:

46. (Amended) A method according to claim 33, wherein the polymeric film comprises:



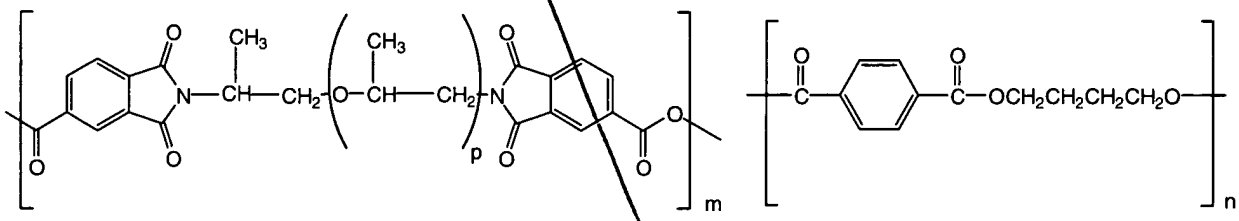
wherein m is in arrange from about 1 to about 4 and n is from about 3 to about 20.

47. (Amended) A method according to claim 33, wherein the polymeric film comprises:



wherein m is in a range from about 10 to about 300 and n is in a range from about 5 to about 300.

48. (Amended) A method according to claim 33, wherein the polymeric film comprises:



wherein m is in a range from about 1 to about 60, p is in a range from about 10 to 200, and n is in a range from about 5 to about 300.